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**DHEC Health Advisory**

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## **Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola**

**Summary:** This is a DHEC Advisory to provide notification of an update in CDC guidance for personal protective equipment (PPE); the new guidelines provided for healthcare workers during the management of patients with Ebola virus disease (Ebola).

**Background:** The Centers for Disease Control and Prevention is tightening previous infection control guidance for all healthcare workers entering the room of a patient hospitalized with Ebola virus disease (Ebola), to ensure there is no ambiguity. The guidance focuses on specific personal protective equipment (PPE) health care workers should use and offers detailed step by step instructions for how to put the equipment on and take it off safely.

Recent experience from safely treating patients with Ebola at Emory University Hospital, Nebraska Medical Center and National Institutes of Health Clinical Center are reflected in the guidance.

The enhanced guidance is centered on three principles:

- Prior to working with Ebola patients, all healthcare workers involved in the care of Ebola patients must have received repeated training and have demonstrated competency in performing all Ebola-related infection control practices and procedures, and specifically in donning/doffing proper PPE.
- While working in PPE, healthcare workers caring for Ebola patients should have no skin exposed.
- The overall safe care of Ebola patients in a facility must be overseen by an onsite manager at all times, and each step of every PPE donning/doffing procedure must be supervised by a trained observer to ensure proper completion of established PPE protocols.

The updated guidance reflects lessons learned from the recent experiences of Emory University Hospital, Nebraska Medical Center and the NIH Clinical Center which provided care for Ebola patients and emphasizes the importance of **training, practice, competence, and observation** of healthcare workers in correct donning and doffing of PPE selected by the facility. None of the workers at these facilities have contracted the illness.

## **Principle #1: Rigorous and repeated training**

Focusing only on PPE gives a false sense of security of safe care and worker safety. Training is a critical aspect of ensuring infection control. Facilities need to ensure all healthcare providers practice numerous times to make sure they understand how to appropriately use the equipment, especially in the step by step donning and doffing of PPE. CDC and partners will ramp up training offerings for healthcare personnel across the country to reiterate all the aspects of safe care recommendations.

## **Principle #2: No skin exposure when PPE is worn**

Given the intensive and invasive care that US hospitals provide for Ebola patients, the tightened guidelines are more directive in recommending no skin exposure when PPE is worn.

CDC is recommending all of the same PPE included in the August 1, 2014 guidance, with the addition of coveralls and single-use, disposable hoods. Goggles are no longer recommended as they may not provide complete skin coverage in comparison to a single use disposable full face shield. Additionally, goggles are not disposable, may fog after extended use, and healthcare workers may be tempted to manipulate them with contaminated gloved hands. PPE recommended for U.S. healthcare workers caring for patients with Ebola includes:

- Double gloves
- Boot covers that are waterproof and go to at least mid-calf or leg covers
- Single use fluid resistant or impermeable gown that extends to at least mid-calf **or** coverall without intergraded hood.
- Respirators, including either N95 respirators or powered air purifying respirator(PAPR)
- Single-use, full-face shield that is disposable
- Surgical hoods to ensure complete coverage of the head and neck
- Apron that is waterproof and covers the torso to the level of the mid-calf should be used if Ebola patients have vomiting or diarrhea

The guidance describes different options for combining PPE to allow a facility to select PPE for their protocols based on availability, healthcare personnel familiarity, comfort and preference while continuing to provide a standardized, high level of protection for healthcare personnel.

The guidance includes having:

- **Two specific, recommended PPE options** for facilities to choose from. Both options provide equivalent protection if worn, donned and doffed correctly.
- **Designated areas for putting on and taking off PPE.** Facilities should ensure that space and lay-out allows for clear separation between clean and potentially contaminated areas
- **Trained observer to monitor PPE** use and safe removal

- **Step-by-step PPE removal instructions** that include:
  - Disinfecting visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment
- **Disinfection of gloved hands** using either an EPA-registered disinfectant wipe or alcohol-based hand rub between steps of taking off PPE.

### **Principle #3: Trained monitor**

CDC is recommending a trained monitor actively observe and supervise each worker taking PPE on and off. This is to ensure each worker follows the step by step processes, especially to disinfect visibly contaminated PPE. The trained monitor can spot any missteps in real-time and immediately address.

### **PPE is Only One Aspect of Infection Control**

It is critical to focus on other prevention activities to halt the spread of Ebola in healthcare settings, including:

- Prompt screening and triage of potential patients
- Designated site managers to ensure proper implementation of precautions
- Limiting personnel in the isolation room
- Effective environmental cleaning

### **Think Ebola and Care Carefully**

The CDC reminds health care workers to “Think Ebola” and to “Care Carefully.” Health care workers should take a detailed travel and exposure history with patients who exhibit fever, severe headache, muscle pain, weakness, diarrhea, vomiting, stomach pain, unexplained hemorrhage. If the patient is under investigation for Ebola, health care workers should activate the hospital preparedness plan for Ebola, isolate the patient in a separate room with a private bathroom, and to ensure standardized protocols are in place for PPE use and disposal. Health care workers should not have physical contact with the patient without putting on appropriate PPE.

### **CDC’s Guidance for U.S. Healthcare Settings is Similar to MSF’s (Doctors Without Borders) Guidance**

Both CDC’s and MSF’s guidance focuses on:

- **Protecting skin and mucous membranes** from all exposures to blood and body fluids during patient care
- **Meticulous, systematic strategy for putting on and taking off PPE** to avoid contamination and to ensure correct usage of PPE

- **Use of oversight and observers** to ensure processes are followed
- **Disinfection of PPE prior to taking off:** CDC recommends disinfecting visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment. Additionally, CDC recommends disinfection of gloved hands using either an EPA-registered disinfectant wipe or alcohol-based hand rub between steps of taking off PPE. Due to differences in the U.S. healthcare system and West African healthcare settings, MSF's guidance recommends spraying as a method for PPE disinfection rather than disinfectant wipes.

### Five Pillars of Safety

CDC reminds all employers and healthcare workers that PPE is only one aspect of infection control and providing safe care to patients with Ebola. Other aspects include five pillars of safety:

- **Facility leadership has responsibility** to provide resources and support for implementation of effective prevention precautions. Management should maintain a culture of worker safety in which appropriate PPE is available and correctly maintained, and workers are provided with appropriate training.
- **Designated on-site Ebola site manager** responsible for oversight of implementing precautions for healthcare personnel and patient safety in the healthcare facility.
- **Clear, standardized procedures** where facilities choose one of two options and have a back-up plan in case supplies are not available.
- **Trained healthcare personnel:** facilities need to ensure all healthcare providers practice numerous times to make sure they understand how to appropriately use the equipment.
- **Oversight of practices** are critical to ensuring that implementation protocols are done accurately, and any error in putting on or taking off PPE is identified in real-time, corrected and addressed, in case potential exposure occurred.

### Resources for Additional Information

<http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>

<http://www.cdc.gov/media/releases/2014/fs1020-ebola-personal-protective-equipment.html>

<http://www.scdhec.gov/Health/FHPF/HealthAlertsNotifications/>

<http://www.cdc.gov/vhf/ebola/>

<http://www.scdhec.gov/Health/FHPF/HealthAlertsNotifications/Ebola/>

## DHEC contact information for reportable diseases and reporting requirements

Reporting of Ebola virus disease is consistent with South Carolina Law requiring the reporting of diseases and conditions to your state or local public health department. (State Law # 44-29-10 and Regulation # 61-20) as per the DHEC 2014 List of Reportable Conditions available at: <http://www.scdhec.gov/Library/CR-009025.pdf>

Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities to collect and receive such information for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512).

## Regional Public Health Offices – 2014

### Mail or call reports to the Epidemiology Office in each Public Health Region.

#### **LOW COUNTRY PUBLIC HEALTH REGION**

##### **Berkeley, Charleston, Dorchester**

4050 Bridge View Drive, Suite 600  
N. Charleston, SC 29405  
Phone: (843) 953-0043  
Fax: (843) 953-0051  
Nights / Weekends: (843) 441-1091

##### **Beaufort, Colleton, Hampton, Jasper**

219 S. Lemacks Street  
Walterboro, SC 29488  
Phone: (843) 549-1516  
Fax: (843) 549-6845  
Nights / Weekends: (843) 441-1091

##### **Allendale, Bamberg, Calhoun, Orangeburg**

932 Holly Street  
Holly Hill, SC 29059  
Phone: (803) 300-2270  
Fax: (843) 549-6845  
Nights / Weekends: (843) 441-1091

#### **MIDLANDS PUBLIC HEALTH REGION**

##### **Kershaw, Lexington, Newberry, Richland**

2000 Hampton Street  
Columbia, SC 29204  
Phone: (803) 576-2749  
Fax: (803) 576-2993  
Nights / Weekends: (888) 801-1046

##### **Chester, Fairfield, Lancaster, York**

PO Box 817  
1833 Pageland Highway  
Lancaster, SC 29720  
Phone: (803) 286-9948  
Fax: (803) 286-5418  
Nights / Weekends: (888) 801-1046

##### **Aiken, Barnwell, Edgefield, Saluda**

222 Beaufort Street, NE  
Aiken, SC 29801  
Phone: (803) 642-1618  
Fax: (803) 643-8386  
Nights / Weekends: (888) 801-1046

#### **PEE DEE PUBLIC HEALTH REGION**

##### **Chesterfield, Darlington, Dillon, Florence, Marlboro, Marion**

145 E. Cheves Street  
Florence, SC 29506  
Phone: (843) 661-4830  
Fax: (843) 661-4859  
Nights / Weekends: (843) 915-8845

##### **Clarendon, Lee, Sumter**

PO Box 1628  
105 North Magnolia Street  
Sumter, SC 29150  
Phone: (803) 773-5511  
Fax: (803) 775-9941  
Nights/Weekends: (843) 915-8845

##### **Georgetown, Horry, Williamsburg**

1931 Industrial Park Road  
Conway, SC 29526-5482  
Phone: (843) 915-8804  
Fax: (843) 915-6502  
Nights/Weekends: (843) 915-8845

#### **UPSTATE PUBLIC HEALTH REGION**

##### **Anderson, Oconee**

220 McGee Road  
Anderson, SC 29625  
Phone: (864) 260-5801  
Fax: (864) 260-5623  
Nights / Weekends: (866) 298-4442

##### **Abbeville, Greenwood, Laurens, McCormick**

1736 S. Main Street  
Greenwood, SC 29646  
Phone: (864) 227-5947  
Fax: (864) 953-6313  
Nights / Weekends: (866) 298-4442

##### **Cherokee, Greenville, Pickens**

PO Box 2507  
200 University Ridge  
Greenville, SC 29602-2507  
Phone: (864) 372-3133  
Fax: (864) 282-4373  
Nights / Weekends: (866) 298-4442

#### **UPSTATE PUBLIC HEALTH REGION (continued)**

##### **Spartanburg, Union**

PO Box 2507  
200 University Ridge  
Greenville, SC 29602-2507  
Phone: (864) 372-3133  
Fax: (864) 282-4373  
Nights / Weekends: (866) 298-4442

#### **DHEC Bureau of Disease Control**

##### **Division of Acute Disease Epidemiology**

1751 Calhoun Street  
Box 101106  
Columbia, SC 29211  
Phone: (803) 898-0861  
Fax: (803) 898-0897  
Nights / Weekends: 1-888-847-0902



[www.scdhec.gov](http://www.scdhec.gov)

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